

***Androscoggin River and Gulf Island Pond
Water Quality Monitoring Plan
2004***

Prepared For:

***Nexfor Fraser Papers, Berlin, New Hampshire
MeadWestvaco, Rumford, Maine
International Paper Company, Jay, Maine
June 8, 2004***

Prepared by

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***Androscoggin River and Gulf Island Pond
Water Quality Monitoring Plan
2004***

Introduction

The following sections of this document describe the scope, methods and procedure to be used to implement the 2004 Androscoggin River and Gulf Island Pond Water Quality Monitoring Program.

Sampling Schedule

Samples will be collected at selected sampling sites on the Androscoggin River and in Gulf Island Pond once per week for 14 weeks. Sampling will start the week of June 14, 2004 and the last sampling will take place the week of September 13, 2004.

The sampling on the Pond is planned for Wednesday each week. The sampling on the River is planned for Wednesday each week. The schedule may be adjusted if weather conditions are unsuitable or unsafe for the sampling to occur.

Samples will be collected each day according to the following schedule.

Gulf Island Pond		
Dissolved oxygen/temperature profiles And Secchi Disk Depth	5:00 AM to 8:00 AM and Starting at 1:00 PM	
Chemical Parameters	Starts at 1:00 PM	
Androscoggin River		
Chemical parameters	9:00 AM to 2:00 PM	

Gulf Island Pond, Sampling Sites, Parameters and Procedures

The following table provides a summary of the sampling sites to be sampled in Gulf Island Pond, the parameters to be sampled for and the sampling procedure to be used. Details of the parameters and sampling procedures are provided following the tabular summary.

Gulf Island Pond Sampling Program, 2004

<i>Location</i>	<i>Sample</i>	<i>NO₂+3, NH₃ (Sol.)</i>	<i>TKN</i>	<i>TP</i>	<i>Ortho P (Sol.)</i>	<i>True Color</i>	<i>Chl-a (Cor & Un-Cor) HETL</i>	<i>Secchi</i>	<i>DO/Temp Profiles</i>
<i>Turner Bridge</i>	Core from	PM	PM	PM	PM	PM	PM	AM & PM	AM& PM
<i>U. Narrows</i>	surface to 2	PM	PM	PM	PM	PM	PM	AM & PM	AM& PM
<i>L. Narrows</i>	x secchi	PM	PM	PM	PM	PM	PM	AM & PM	AM& PM
<i>Gulf Island Pond 4</i>	disk	PM	PM	PM	PM	PM	PM	AM & PM	AM& PM
<i>Deep Hole</i>	(< 10Meter)	PM	PM	PM	PM	PM	PM	AM & PM	AM& PM
<i>Duplicates per week</i>		0.5	0.5	0.5	0.5	0.5	0.5	1	1
<i>Field Blanks per week</i>		0.5	0.5	1	1	0.5	0.5		

Each sample location will be marked with a white buoy. The buoys will be placed with assistance from the DEP staff. GPS coordinates will be recorded for each buoy location in case a buoy is disturbed.

Dissolved oxygen and temperature reading will be obtained at one meter intervals from the surface to one meter above the bottom of the pond using a properly calibrated YSI Model 85 field meter. The dissolved oxygen meter will be air calibrated before each run and checked periodically throughout the day. The calibration checks will noted on sampling sheets. The meters will be calibrated and operated according to YSI manual protocol and standard operating procedures. In addition to meter calibration, meters will also be crosschecked with a YSI Model 55 at the beginning and end of sampling to assure consistency throughout the entire project. A backup YSI Model 51B will also be available to obtain data in the event that the primary meter becomes dysfunctional. The temperature function of the meter will be check against a standard mercury laboratory thermometer in the laboratory before and after each sampling day. The degree of variation will be recorded. The meters will be considered to be within acceptable calibration range if the dissolve oxygen readings between the Model 85 and the Model 55 agree within 0.3 ppm and temperature to within 2 degrees C. Readings will be rounded and recorded to the nearest 0.1.

Secchi Disk reading will be taken in an anchored boat with the samplers back to the sun. A viewing scope will be held on the water surface and the disk, which is attached to a chain or rope, is lowered below the water surface holding the chain as vertically as possible, until the disk disappears. Next the disk should be raised again until it is visible and then lowered until it disappears again and the depth on the chain will then be recorded.

Sample for chemical analysis will be collected using a tube sampler or sludge judge. Samples will be collected as continuous samples from the surface of the pond to a depth of 2 times the secchi disk depth up to a maximum depth of 10 meters. A plastic sampling bucket will be filled sufficiently to allow all laboratory parameter containers to be filled with a single filling of the bucket. This will require approximately four liters (1 gallon) of water in the bucket with some additional allowance for spillage. The sample

containers will be filled by pouring water from the bucket into the sample containers. Both the sample bucket and core sampler will be rinsed three times prior to sampling at each sample location.

Only pre-prepared sample containers from the laboratory will be used to contain the samples. Sample containers will be stored in an insulated cooler under ice. A detailed record of each sampling at each sample site will be prepared. Chain-of-custody forms will be prepared and signed for each sampling event. Copies of the sampling record and chain-of-custody forms are attached.

The crew chief will complete field sampling forms that describe weather conditions at the time of the sampling and observation of algae development on the pond at each sampling site. The crew chief will indicate if an algae bloom exists at or near the sampling site. A copy of the field sampling forms to be used for this project is included in Appendix B.

A duplicate sample for each analytical parameter will be collected every other week. The site of the duplicate sample will be rotated each week. Field blanks using ultra-pure distilled water will also be prepared for each analytical parameter every other week. Field blanks will be prepared using the field sampling equipment after rinsing.

Androscoggin River

The following table provides a summary of the sampling sites to be sampled in the Androscoggin River, the parameters to be sampled for and the sampling procedure to be used. Details of the parameters and sampling procedures are provided following the tabular summary. The sampling will start in Berlin and proceed downstream.

Androscoggin River Sampling Program, 2004

<i>Location</i>	<i>Sample Kemm.</i>	<i>TKN</i>	<i>NH₃ (Sol.)</i>	<i>NO₂+3 (Sol.)</i>	<i>Ortho P (Sol.)</i>	<i>TP</i>	<i>Chl a (Cor and Un-Cor) HETL</i>	<i>True Color</i>
<i>Above Burgess 12th St</i>	Grab	Mid-day	Mid-day	Mid-day	Mid-day	Mid-day		Mid-day
<i>Shelburn N. Rd. Br</i>	Grab				Mid-day	Mid-day		Mid-day
<i>Bethel Bridge</i>	Grab				Mid-day	Mid-day		Mid-day
<i>Canal Bridge</i>	Comp	Mid-day	Mid-day	Mid-day	Mid-day	Mid-day		Mid-day
<i>Dixfield Br.</i>	Grab				Mid-day	Mid-day		Mid-day
<i>Riley Dam</i>	Grab	Mid-day	Mid-day	Mid-day	Mid-day	Mid-day		Mid-day
<i>L Falls Bridge</i>	Comp				Mid-day	Mid-day		Mid-day
<i>Twin Bridges</i>	Grab	Mid-day	Mid-day	Mid-day	Mid-day	Mid-day	Mid-day	Mid-day
<i>Duplicates per week</i>		0.5	0.5	0.5	0.5	0.5	0.5	0.5
<i>Field Blanks per week</i>		0.5	0.5	0.5	0.5	0.5		0.5

Sample for chemical analysis will be collected using a Kemmerer sampler from a bridge or other land based sampling platform. Samples will be collected as grab samples at mid-depth at mid-channel if the depth at the sampling site is less than 2.5 meters. If the depth is greater than 2.5 meters, the samples will be composites by collecting a grab just below the surface (1/4 depth), mid depth and near the bottom (3/4 depth). A plastic sampling bucket will be filled sufficiently to allow all laboratory parameter containers to be filled

with a single filling of the bucket. This will require approximately four liters (1 gallon) of water in the bucket with some additional allowance for spillage. The sample containers will be filled by pouring water from the bucket into the sample containers. Both the sample bucket and the sampler will be rinsed three times prior to sampling at each sample location.

Only pre-prepared sample containers from the laboratory will be used to contain the samples. Sample containers will be stored in an insulated cooler under ice. A detailed record of each sampling at each sample site will be prepared. Chain-of-custody forms will be prepared and signed for each sampling event. Once all of the samples have been collected for the day, the crew chief is responsible for verifying that all of the samples are in the cooler and the chain-of-custody form is filled out correctly and signed. The chain-of-custody form will be placed inside a plastic bag and placed in the cooler with the samples. The cooler will be closed and taped. The tape will be signed by the crew chief. Copies of the sampling record and chain-of-custody forms are attached in Appendix B.

The crew chief will complete field sampling forms that describe weather conditions at the time of the sampling and other pertinent sampling information. Copies of the field sampling form to be used for this project are included in Appendix B.

The sample cooler will be transported to the Acheron laboratory and opened. Each sample will be cross-checked with the COC form. A sample number will be assigned to each sample and the number will be added to the COC form. The chain-of-custody form will be signed by the laboratory technician as having received the samples with the time and date indicated in the space provided. Some samples will be removed for filtering and storage at the Acheron laboratory and some samples will be transferred to another cooler for transport by courier to other laboratories.

A new COC form will be prepared for the samples to be transported. The COC form will be signed by the laboratory technician preparing the form and preparing the samples for transport. The samples will be packed in ice or cold-packs and the new signed COC form will be placed in the cooler. The transport cooler will be taped and signed by the technician who prepared the samples for transport and prepared the COC form. The sealed cooler will be delivered to the receiving laboratory.

The receiving laboratory will check the signed tape to assure that the sample container has not been tampered with during transport. The laboratory technician will open the container and check the samples against the COC. Once all the samples are checked and received at the laboratory, the COC form will be signed. Any anomalies are reported to Acheron immediately. The fully executed COC is returned to Acheron with the analytical report.

Androscoggin River Light Extinction Study

On two separate occasions, Acheron will take field measurements and collect samples for laboratory analysis at five impoundments in the Androscoggin River. The sampling events will occur during one day in each of two weeks. The sampling events will occur at least one week apart. The field measurements and sampling will be performed between 10:00 AM and 3:00 PM. The sampling sites and parameters are listed in the following table.

Androscoggin River - Light Extinction Study

<i>Location</i>	<i>Sample Type</i>	<i>Secchi Disk</i>	<i>True Color</i>	<i>TSS</i>	<i>VSS</i>	<i>Light Intensity</i>
Saw Mill Imp (Berlin)	Core	PM	PM	PM	PM	PM
Virginia Impoundment	Core	PM	PM	PM	PM	PM
Riley Impoundment	Core	PM	PM	PM	PM	PM
GIP Twin Bridges	Core	PM	PM	PM	PM	PM
Duplicates	Core	0.5	0.5	0.5	0.5	0.5
Field Blanks		0.5	0.5	0.5	0.5	0.5

Secchi Disk reading will be taken in an anchored boat with the samplers back to the sun. A viewing scope will be held on the water surface and the disk, which is attached to a chain or rope, is lowered below the water surface holding the chain as vertically as possible, until the disk disappears. Next the disk should be raised again until it is visible and then lowered until it disappears again and the depth on the chain will then be recorded. Light intensity will be measured at one meter intervals.

Sample for chemical analysis will be collected using a tube sampler or sludge judge. Samples will be collected as continuous samples from the surface of the pond to a depth of 2 times the secchi disk depth up to a maximum depth of 10 meters. A plastic sampling bucket will be filled sufficiently to allow all laboratory parameter containers to be filled with a single filling of the bucket. This will require approximately four liters (1 gallon) of water in the bucket with some additional allowance for spillage. The sample containers will be filled by pouring water from the bucket into the sample containers. Both the sample bucket and core sampler will be rinsed three times prior to sampling at each sample location.

Only pre-prepared sample containers from the laboratory will be used to contain the samples. Sample containers will be stored in an insulated cooler under ice. A detailed record of each sampling at each sample site will be prepared. Chain-of-custody forms will be prepared and signed for each sampling event. Copies of the sampling record and chain-of-custody forms are attached.

The crew chief will complete field sampling forms at each sampling site and during each sampling event.

Laboratory Analytical Procedures

Chlorophyll-a samples will be analyzed at the HETL laboratory for corrected and uncorrected chlorophyll-a.

The analyses for all other parameters will be analyzed at a commercial laboratory certified in Maine by the Department of Human Services. The following is a list of the analytical procedures to be used and the detection limit for each parameter.

Parameter	TKN	NH3	NO3	NO2	Ortho-P	TP	True Color	TSS
Test Method	SM 4500 N-B	SM 4500NH3E	EPA 352.1	SM 4500NO2B	EPA 365.2	EPA 365.2	EPA 110.3	EPA 160.2
Detection Limit mg/l	0.1	0.01	0.01	0.005	0.001	0.001	2 PCU	1 mg/l

All of the ortho-P samples will be filtered and preserved the same day the samples are collected.

For laboratory duplicates the following procedure will be followed. For all nutrient (TKN, NH3-N, NO2+NO3-N, PO4-P, TP) one duplicate and one spiked sample will be run for every twenty samples for an overall coverage of 10%. A mid range standard and outside check sample will be run, in addition, for 1 out of every 10 samples. For chlorophyll-a, a duplicate will be run for 1 of 8 filters run.

Attached in Appendix A is a copy of relevant laboratory QA/QC documents for the various analytes covered by this work plan.

Reporting

Following completion of the sampling and receipt of all laboratory data, a detailed data report will be provided. The data report will include maps showing the location of all sampling sites and a description of sampling procedures. A summary of the field data and analytical test results will be provided in spreadsheet format. A copy of the final laboratory reports will be provided.

Acheron will review, report, and summarize the data from the three continuous dissolved oxygen monitoring probes in the Androscoggin River, specifically International Paper's probe below Jay, United States Geological Survey's probe below Jay, and Gulf Island Pond Oxygenation Partnership's probe at Turner Bridge. These three probes are located in the sensitive region of predicted dissolved oxygen sag in this region of the Androscoggin River. Acheron will investigate with the entities that maintain these probes regarding any anomalous or absent data. These findings will be included in the final report.

One camera ready copy of the report will be provided along with an electronic version of the report in PDF format. The final report will be provided to each of the three participating mills four weeks following receipt of the final laboratory reports.

End of Document

Appendix A

Laboratory QA/QC Documents

Microbac Laboratories, Inc
Maine Testing Division Standard Operating Procedure

SOP	Revision	Effective Date
MDL Chart	2	Jan 1, 2003

MDL Study for 2004

Name of Test/Analyte: Ammonia

Sample Matrix: Wastewater/Drinking Water

Date of Analysis: 5/25/04

Instrument: orion meter

Concentration of Standards used: 0.050 ppm

Actual Values:

1. 0.053

2. 0.051

3. 0.054

4 0.048

5. 0.048

6. 0.047

7. 0.053

Mean : 0.0505

Standard Deviation: 0.0029

Calculated MDL: 0.0091

PQL / Reported Detection limit: 0.010 ppm

Microbac Laboratories, Inc
Maine Testing Division Standard Operating Procedure

SOP	Revision	Effective Date
MDL Chart	2	Jan 1, 2003

MDL Study for 2004

MDL Study for 2004

Name of Test/Analyte: Nitrate Brucine

Sample Matrix: Wastewater

Date of Analysis: 3/16/04

Instrument: Spectrophotometer

Concentration of Standards used: 0.050 ppm

Actual Values:

1. 0.0518
2. 0.0501
3. 0.0484
4. 0.0515
5. 0.0501
6. 0.0507
7. 0.0510

Mean : 0.0505

Standard Deviation: 0.0011

Calculated MDL: 0.0035

PQL / Reported Detection limit: 0.010 ppm

Microbac Laboratories, Inc
Maine Testing Division Standard Operating Procedure

SOP	Revision	Effective Date
MDL Chart	2	Jan 1, 2003

MDL Study for 2004

MDL Study for 2004

Name of Test/Analyte: Nitrite

Sample Matrix: Wastewater/Drinking Water

Date of Analysis: 3/18/04

Instrument: Spectrophotometer

Concentration of Standards used: 0.025 ppm

Actual Values:

1. 0.02448

2. 0.02517

3. 0.02379

4. 0.02482

5. 0.02448

6. 0.02482

7. 0.02517

Mean : 0.0246

Standard Deviation: 0.00045

Calculated MDL: 0.0014

PQL / Reported Detection limit: 0.005 ppm

Microbac Laboratories, Inc
Maine Testing Division Standard Operating Procedure

SOP	Revision	Effective Date
MDL Chart	2	Jan 1, 2003

MDL Study for 2004

MDL Study for 2004

Name of Test/Analyte: TKN

Sample Matrix: Wastewater/Drinking Water

Date of Analysis: 3/16/04

Instrument: Orion meter

Concentration of Standards used: 0.50 ppm

Actual Values:

1. 0.498

2. 0.508

3. 0.507

4. 0.512

5. 0.489

6. 0.491

7. 0.493

Mean : 0.499

Standard Deviation: 0.0092

Calculated MDL: 0.0290

PQL / Reported Detection limit: 0.100 ppm

Acheron Environmental Laboratory
SPLIT RESULTS LOW LEVEL TOTAL PHOSPHORUS

<u>Client</u>	<u>Date Sampled</u>	<u>Sample #</u>	SPLIT RESULTS		<u>University of Maine (mg/L)</u>
			<u>Acheron</u> (mg/L)	<u>H.E.T.L</u> (mg/L)	
quossoc	12/20/01	2001-12-047.01	0.004	0.004	
	12/20/01	2001-12-047.02	0.014	0.012	
nstruction	08/15/01	2001-08-030	0.034	0.037	
– Gard Lake	01/07/02	2002-01-015	0.004	0.004	
– Deblois	01/17/02	2002-01-010.01	0.008	0.010	
– Deblois	01/21/02	2002-01-039.01	0.004	0.004	
quossoc	05/15/02	2002-05-060.02	0.009	0.005	
	05/15/02	2002-05-060.03	0.034	0.032	
	05/15/02	2002-05-060.04	0.022	0.020	
	05/15/02	2002-05-060.05	0.006	0.005	
	05/12/04	2004-05-037.06	0.022	Did not analyzed	0.022
	05/19/04	2004-05-055.04	0.033	0.033	0.032

ACHERON ENVIRONMENTAL LABORATORY

INITIAL / CONTINUING DEMONSTRATION OF CAPABILITY

PRECISION & ACCURACY COMPARISON - LOW RANGE TOTAL PHOS.

DATE	CONC.	UNITS	TEST RESULT		% RECOVERY	
03/19/04	20	ppb	REP # 1	20.55	REP # 1	103
03/25/04	20	ppb	REP # 2	20.10	REP # 2	100
04/01/04	20	ppb	REP # 3	21.44	REP # 3	107
04/22/04	20	ppb	REP # 4	19.21	REP # 4	96
05/06/04	20	ppb	REP # 5	20.75	REP # 5	104
05/13/04	20	ppb	REP # 6	21.55	REP # 6	108
05/20/04	20	ppb	REP # 7	20.99	REP # 7	105

PRECISION

METHOD CRITERIA	s=STD DEV=	
TEST RESULTS	s=STD DEV=	0.8109
	RSD =	3.9%

ACCURACY

METHOD CRITERIA		%REC.	
TEST RESULTS	MEAN = 20.7	%REC.	103%

ACHERON ENVIRONMENTAL LABORATORY

INITIAL / CONTINUING DEMONSTRATION OF CAPABILITY

PRECISION & ACCURACY COMPARISON - LOW RANGE TOTAL PHOS.

DATE	CONC.	UNITS	SPIKE RECOVERY		% RECOVERY	
08/07/03	25	ppb	REP # 1	24.46	REP # 1	98
08/20/03	25	ppb	REP # 2	26.38	REP # 2	106
09/04/03	25	ppb	REP # 3	25.12	REP # 3	100
03/18/04	25	ppb	REP # 4	23.72	REP # 4	95
04/01/04	25	ppb	REP # 5	25.51	REP # 5	102
05/06/04	25	ppb	REP # 6	24.90	REP # 6	100
05/20/04	25	ppb	REP # 7	23.63	REP # 7	94

PRECISION

METHOD CRITERIA	s=STD DEV=	
TEST RESULTS	s=STD DEV=	0.9799
	RSD =	3.9%

ACCURACY

METHOD CRITERIA		%REC.	
TEST RESULTS	MEAN = 24.8	%REC.	99%

MDL Calculation Spreadsheet

Number	Column A	Column B
1	Analyte	Phosphorus
2	Method	EPA 365.2
3	Date	03/02/04
4	Instrument	Low Level
5	Spike Concentration	5
6	Units	ppb
7	Replicate 1	4.87
8	Replicate 2	5.02
9	Replicate 3	4.89
10	Replicate 4	5.08
11	Replicate 5	5.2
12	Replicate 6	4.72
13	Replicate 7	5.28
14	Replicate 8	4.83
15	Replicate 9	
16	Number of Values(n)	8
17	Mean	4.986
18	Sample Std Dev (s)	0.192720189
19	Critical Value (Tn)	2.1
20	Outlier Above	5.391
21	Outlier Below	4.581
22	Students' t Value	3
23	MDL	0.578
24	LOQ	1.927
25	High Spike Check	
26	Low Spike Check	
27	Minimum of 7 Replicates	
28	S/N	25.87
29	Analyst Name	AGW

Signature



Date

3/2/04**Analyst Notes:** MDL = 0.6 ppb

RSD = 3.9%

20 ppb STD REC 97%

6 ppb STD REC 99%

Blank Poland Spring Water

Adheron Environmental Laboratory

DATE: 5/28/04

Ortho

~~LOW LEVEL TOTAL PHOSPHORUS~~

METHOD: EPA 365.2

Analyst: MS

[illegible]

DEC 11 2003

CWA
Performance Evaluation Report
NSI Laboratory Proficiency Testing Program
Study WP-088 - Shipped: 10/03/2003 - Closed: 11/19/2003
USEPA Labcode: ME00030

7517 Precision Drive, Suite 101, Raleigh, NC 27617
NVLAP Code: 200440-0

This evaluation report is being submitted to:
Acheron Environmental Laboratory
Attention: John E. Wedin
147 Main Street
Newport, ME, 04953

LabCode and Accreditation Information:

Send Results to: State and EPA
EPA Lab Code: ME00030
State Lab Code:
State Agency: Maine Department of Human Services
Attention: Phillip Haines
Address: State House Station 11, Key Plaza, 8th Floor
City/State/Zip: Augusta, ME 04333-0011
Reports to: ME

Participant Information

NSI Lab Code: N00190

This report was submitted by John E. Wedin, Lab Mgr..

Acheron Environmental Laboratory
147 Main Street
Newport, ME, 04953

207-368-5786

Please contact Mark Hammersla at NSI if you have any questions about this report.
(800) 234-7837 - Mark.Hammersla@NSI-ES.com

This PT report may contain data not covered under NVLAP Accreditation.

PEI-026 Demand - Acheron Environmental Laboratory - NSI Solutions/WP-088

Analyte	Method Description	Reported Value	Assigned Value	Units	Warning Limits	Acceptance Limits	Evaluation
38 BOD	USEPA 405.1	88.0	86.0	mg/L	57.6 to 114	43.4 to 129	ACCEPT.
36 COD	USEPA 410.4	133.0	139	mg/L	115 to 151	106 to 160	ACCEPT.
102 CBOD	-- Not Reported --						
37 TOC	-- Not Reported --						

PEI-027 Minerals - Acheron Environmental Laboratory - NSI Solutions/WP-088

Analyte	Method Description	Reported Value	Assigned Value	Units	Warning Limits	Acceptance Limits	Evaluation
23 Calcium	USEPA 215.1	66.5	64.3	mg/L	60.1 to 70.3	57.5 to 72.8	ACCEPT.
28 Chloride	SM 4500C1B 20ED	185.0	185	mg/L	175 to 196	169 to 201	ACCEPT.
24 Magnesium	USEPA 242.1	26.6	24.3	mg/L	22.2 to 26.2	21.2 to 27.2	CK. FOR ERR.
25 Sodium	USEPA 273.1	15.4	15.2	mg/L	14.1 to 16.8	13.4 to 17.5	ACCEPT.
20 Specific Conductance (at 25C)	USEPA 120.1	756.0	752	umhos/cm	711 to 793	690 to 814	ACCEPT.
30 Sulfate	USEPA 375.3	25.5	31.7	mg/L	27.4 to 35.2	25.4 to 37.2	CK. FOR ERR.
27 Total Alkalinity (CaCO3)	USEPA 310.1	19.0	16.6	mg/L	14.5 to 19.9	13.1 to 21.3	ACCEPT.
21 Total Dissolved Solids (TDS)	USEPA 160.1	422.0	495	mg/L	418 to 571	380 to 609	ACCEPT.
22 Total Hardness (CaCO3)	USEPA 130.2	276.0	261	mg/L	246 to 277	239 to 284	ACCEPT.
105 Total Solids*	USEPA 160.3	458.0	545	mg/L	461 to 628	420 to 670	CK. FOR ERR.
29 Fluoride	-- Not Reported --						
26 Potassium	-- Not Reported --						

PEI-028-1 Nutrients - Acheron Environmental Laboratory - NSI Solutions/WP-088

Analyte	Method Description	Reported Value	Assigned Value	Units	Warning Limits	Acceptance Limits	Evaluation
31 Ammonia as N	USEPA 350.2	13.7	14.8	mg/L	12.6 to 16.9	11.5 to 17.9	ACCEPT.
32 Nitrate as N	USEPA 352.1	33.2	32.7	mg/L	28.1 to 36.6	25.9 to 38.8	ACCEPT.
33 Orthophosphate as P	USEPA 365.2	1.01	1.03	mg/L	0.922 to 1.15	0.865 to 1.20	ACCEPT.

PEI-028-2 Nutrients - Acheron Environmental Laboratory - NSI Solutions/WP-088

Analyte	Method Description	Reported Value	Assigned Value	Units	Warning Limits	Acceptance Limits	Evaluation
35 Total Phosphorus	USEPA 365.2	2.1	2.24	mg/L	1.86 to 2.49	1.70 to 2.65	ACCEPT.
34 Total Kjeldahl Nitrogen	-- Not Reported --						

PEI-032 Total Phenolics - Acheron Environmental Laboratory - NSI Solutions/WP-088

Analyte	Method Description	Reported Value	Assigned Value	Units	Warning Limits	Acceptance Limits	Evaluation
97 Total Phenolics	USEPA 420.1	1.57	1.50	mg/L	1.05 to 1.95	0.829 to 2.18	ACCEPT.

PEI-033 Total Residual Chlorine - Acheron Environmental Laboratory - NSI Solutions/WP-088

Appendix B

Field Record Forms

Gulf Island Pond 2004 Field Sampling Form

Sampling Site: _____

Sampler(s): _____

Date: _____

Weather: _____

Time: _____

Air Temperature: _____

FIELD PARAMETERS

[illegible]

Sample Depth

(2 x Secchi Disk
Depth)

Secchi Disk Depth

m

Algae Bloom: ☐ Yes

LAB ANALYSES

Sample ID	Bottle #	Preservation	Container	Volume	Analysis Requested

Remarks: _____

Gulf Island Pond 2004 Field Sampling Form

Sampling Site: _____

Sampler(s): _____

Date: _____

Weather: _____

Time: _____

Air Temperature: _____

FIELD PARAMETERS

[illegible]

Algae Bloom: ☐ Yes

Remarks: _____

Gulf Island Pond 2004 DO Meter Field Calibration Record

Date: _____

Sampler(s): _____

Time: _____

Weather: _____

Air Temperature: _____

Barometric Pres. _____

BEFORE AM SAMPLING

Model	Use	Dissolved Oxygen	Temperature	Meter Calibration
YSI 85	Primary	mg/L	°C	
YSI 55	Comparison	mg/L	°C	

AFTER AM SAMPLING

Model	Use	Dissolved Oxygen	Temperature	Meter Calibration
YSI 85	Primary	mg/L	°C	
YSI 55	Comparison	mg/L	°C	

BEFORE PM SAMPLING

Model	Use	Dissolved Oxygen	Temperature	Meter Calibration
YSI 85	Primary	mg/L	°C	
YSI 55	Comparison	mg/L	°C	

AFTER PM SAMPLING

Model	Use	Dissolved Oxygen	Temperature	Meter Calibration
YSI 85	Primary	mg/L	°C	
YSI 55	Comparison	mg/L	°C	

Remarks: _____

Androscoggin River 2004 Field Sampling Form

Date: _____
 Sampler(s): _____

Weather: _____
 Air Temperature: _____
Sample Bottle Inventory

Sample Site	Time	Meters To River Bottom	Meters to River Surface	Meters to 3/4 Depth	Meters to Mid- depth	Meters to 1/4 Depth	TKN	NH ₃	NO ₂ + NO ₃	Ortho P	TP	Chla	True Color
Above Burgess (grab)		m	m		m								
Shelburne Bridge (grab)		m	m		m								
Bethel Bridge (grab)		m	m		m								
Canal Bridge (composite)		m	m	m	m	m							
Dixfield Bridge (grab)		m	m		m								
Riley Dam Intake (grab)		m	m		m								
Livermore Falls Bridge (composite)		m	m	m	m	m							
Twin Bridges (grab)		m	m		m								
Duplicate		m	m	m	m	m							
Field Blank													

Remarks: _____

Appendix C
Gulf Island Pond, Map of Sampling Sites

